

TWO EAGLE VEGETATION MANAGEMENT PROJECT

OLD GROWTH REPORT

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For:
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Old Growth Existing Conditions

Background Information

Declines in single stratum large tree structures (late –seral ponderosa pine) has been well documented (Wisdom et al. 2000, Squires et al. 2006), while mid-seral shade –tolerant forest seem to be a nearly twice their historical levels. These changes benefit some species but negatively affect others. The winter wren, Swainson’s thrushes, pileated woodpeckers and American marten favor dense, multi-conifer types, which historically were widespread in many dry landscapes. Other wildlife species, however, such as the white-headed woodpecker and flammulated owl are associated with open, old-growth ponderosa pine (Sallabanks et al. 2001). And their populations have possibly declined as result of the loss of this forest type (Csuti et al. 1997, Wisdom et al. 2000).

Thinning reduces completion- induced- mortality in a stand, and can likely enhance habitat for species associated with late seral conditions, particularly if critical structural components, such as dead wood are provide and if stands are managed to provide vertical and horizontal heterogeneity. Effects of thinning on a given species of wildlife may vary across a range of temporal and spatial scales. For example, large tree crowns may ultimately improve habitat for some small mammals and some species of birds to nest and forage, but increased spacing between crowns may temporarily decrease habitat suitability and inhibit dispersal. Hayes et al. (1995) states that knowledge of many species is inadequate to predict responses at multiple time frames, but it is important to consider short-and long-term as well as stand and landscape level perspectives when evaluating the implications of thinning.

Regional Forester Amendment #2 of June 12, 1995 established interim riparian, ecosystem, and wildlife standards for timber sales (these standards are referred to as the “Eastside Screens”). The Eastside Screens require that a range of variation approach be used when comparing historical reference and current conditions, incorporating the best available science. The range of variation approach assumes that native species have evolved with the historical disturbance regimes of an area and so a forest will continue to sustain populations of those species if current conditions fall within the range of variation (Powell 2010). The following range of variation analysis uses methods described in Range of Variation Recommendations for Dry, Moist and Cold Forest (Powell 2010), which is now considered the best available science. Five forest structural stages are identified within these three potential vegetation groups: Stand Initiation (SI), Stem Exclusion (SE), Understory Retention (UR) and Old Forest Single Stratum (OFSS) and Old Forest Multi Strata (OFMS).

Existing Conditions

MA- 15 Old Growth Preservation

There are 574 acres of MA 15 allocated land in the analysis area. Suitable old growth habitat generally contains large diameter live trees, large snags and down wood; old forest multi story (OFMS) provides old growth habitat along with understory re-initiation (UR), though UR typically lacks the density of large structure. No MA- 15 is proposed for treatment.

Late Old-Growth Structure

Analysis was conducted at the subwatershed level totaling 39,020 acres. All potential vegetation groups (PVG) old forest multi-story (OFMS) is above the historic range of variability (HRV) and all PVG are below the HRV and Deficient in old forest single-story (OFSS) (Table 1)

Table 1- Comparison of HRV to existing by potential vegetation group (PVG) in the Two Eagle project

PVG	Existing Acres	% of PVG	Historical Range %
Old Forest Multi Stratum (OFMS)			
moist upland	5,073	47%	15-20%
dry upland	2,773	41%	5-15%
cold upland	3,313	44%	10-25%
Old Forest Single Stratum (OFSS)			
moist upland	131	1%	10-20%
dry upland	212	3%	40-60%
cold upland	0	0%	5-20%

Effects

The Project area is approximately 36 air miles from La Grande, Oregon. The 7,206 acre project area is the analysis area for analysis of direct and indirect effects. The cumulative effects analysis include, subwatershed: Bennet creek-Eagle creek, Upper Eagle creek, and West Eagle creek.

No Direct, Indirect or Cumulative Effects

The following activities associated with the 2 Eagle Project are of such limited and constrained nature that they would have no effect on Old Growth Resources.

- Roadside hazard tree removal
- Closed roads reopened for administrative access
- Road decommissioning
- Temporary road construction and Road reconstruction
- Whitebark Pine treatments
- Culvert Replacement
- Mechanical Control Lines for Burning

These activities and their effects will not be discussed further in the effects to Old Growth Section.

Direct/ Indirect Effects on Old Growth**Alternative 1**

Under this alternative, the risk of uncharacteristic wildfire or disease/ insect outbreaks would continue to increase naturally over time because there would be no changes to stand stocking levels or fuel loads from active management. Existing MA15 and old growth would be at risk if uncharacteristic wildfire and/ or disease and insect outbreaks occurred. Old forest single story structure would continue to be deficient across all potential vegetation groups.

Alternative 2 & 2 Modified**Commercial**

Alternatives 2 and 2 modified would have the same effects to old growth and will be analyzed together. Proposed commercial treatments would occur within *dry, moist and cold forest types*. Treatments would be applied with the intent to move the stands from an OFMS stand structure to an OFSS stand structure which is deficient in all forest types and to improve stand vigor and resistance to insect and disease. No trees over 21 inches dbh would be removed. Commercial treatments applied within old growth for

Alternatives 2 and 2 modified include thinning treatments, improvement treatments, patch openings and harvest fuels treatments.

Thinning treatments are designed to increase the growth of residual trees. Improvement treatments thin and remove undesirable trees (poor form, damaged condition, ecologically inappropriate species ect.) within a stand for the purpose of improving the growth, composition and quality of the remaining stand. *Improvement treatments* prescription is designed to remove diseased and insect damaged trees and associated trees with a high potential to become infected. The trees to be removed with this prescription in Two Eagle are a mix of Douglas-fir and western larch with mistletoe. The treatment would remove those trees with multiple mistletoe brooms and reduce the incidence of future mistletoe. The objective in these stands would be to promote non-susceptible species in the understory. For example, in stands with Douglas-fir mistletoe treatments would promote ponderosa pine and western larch. *Harvest fuels treatments* would remove trees creating ladder fuels and excess down dead woody material with the use of commercial harvest methods. 1116 acres of improvement treatment, 348 acres of thinning are proposed in alternative 2. In addition alternative 2 modified adds in 106 acres of biomass removal. These treatments would remove approximately 15-20% of the canopy cover but would not remove the stand from an old growth structure, but would promote OFSS structure, which is a severely limited habitat in the 2 eagle project area (table 1). Depending on the stand, treatment in some OFMS would remain as OFMS due to a healthy overstory. In these cases, some of the less than 21" Diameter at Breast height (DBH) dominant trees would be removed based on poor form and vigor and disease, however the thinning would not remove the entire midstory to convert the entire stand to OFSS. 11% of the dry OFMS would be moved to OFSS, 2% of moist OFMS would be moved to OFSS and no commercial treatment within OFSS existing is proposed.

Non-commercial

172 acres of non-commercial treatments are proposed within OFMS in both alternatives 2 and 2 Modified. These treatments (hand, mechanical and pre-commercial thinning) are designed to remove ladder fuels and manage understory tree density at appropriate levels using manual methods. Ladder fuels are defined as trees (less than 9" DBH). These treatments would promote optimal conditions for prescribed fire and adds protection to the stands from the risk of severe wildfire. Canopy cover would not be affected during these treatments and the treatments would not move the stands from their current structure, but down wood would be reduced, minimizing available habitat for small mammals and hiding cover for young ungulates and mustelids. Down wood would still be maintained at forest plan levels.

Alternative 3

Alternative 3 proposed commercial treatments would occur within *dry* forest type and only *moist* forest types which occur in the Eagle Creek/ Tamarack Wildland Urban Interface. Dropped units from alternative 2 and 2 modified would follow the alternative 1 narrative. Proposed treatments would be applied with the intent to move the stands from an OFMS stand structure to an OFSS stand structure, which is deficient in all forest types. No trees over 21" DBH would be removed. Commercial treatments applied within old growth for this alternative include thinning treatments, improvement treatments and harvest fuel treatment. 818 acres of improvement treatment, 313 acres in thinning are proposed in alternative 3. These treatments would remove approximately 15-20% of the canopy cover but would not remove the stand from an old growth structure, but would promoting OFSS structure, which is a severely limited habitat in Two Eagle project area. Depending on the stand, treatment in some OFMS would remain as OFMS due to a healthy overstory. In these cases, some of the less than 21" DBH dominant trees would be removed based on poor form and vigor and disease, however the thinning

would not remove the entire midstory to convert the stand to OFSS. No commercial treatment within OFSS is proposed.

Stand growth models indicate that managed UR stands would begin moving into old forest structure in approximately 30-50 year and so most treatments are expected to move UR stands to an old growth condition and alternative 3 would accelerate 457 acres.

Non-commercial

246 acres of non-commercial treatments within OFMS and OFSS are proposed for Alternative 3. These treatments would promote optimal conditions for prescribed fire and add protection to the stands from the risk of severe wildfire. Canopy cover would not be affected during these treatments and the treatments would not move the stands from their current structure. Down wood would be reduced which would minimize available habitat for small mammals and hiding cover for young ungulates and mustelids. Down wood would still be maintained at forest plan levels.

Table 2- Comparison of Old Growth Stand Structure to HRV after Proposed Treatments

Structure/ PVG	HRV	Alternatives			
		1	2	2 Modified	3
OFMS- Moist	15-20%	47%	45%	45%	45%
OFMS- Dry	5-15%	41%	30%	30%	31%
OFMS- Cold	10-25%	44%	44%	44%	44%
OFSS- Moist	10-20%	1%	3%	3%	3%
OFSS- Dry	40-60%	3%	14%	14%	13%
OFSS- Cold	5-20%	0%	0%	0%	0%

There would be no net loss of late old structure (LOS) from any of the action alternatives within the project area. All action alternatives maintain OFMS stand above HRV in all PVG. While OFSS structure would remain severely below HRV in all PVGs, each of the action alternatives would move each of the PVGs toward HRV with the most acres restored in the dry forest habitat, with an increase of 4-7%. The largest increase in dry PVGs would be in Alternative 2 and 2 modified (Table 2).

Cumulative Effects on Old Growth

The existing condition of the Two Eagle project area is a reflection of past management activities which will be taken into consideration along with the present and reasonably foreseeable future activities in the assessment of cumulative effects.

Alternative 1

There would be no cumulative effects from selecting alternative 1. Any changes that would occur over time as a result of selecting this alternative would simply reflect the evolving baseline conditions for the area. Under this alternative, the project areas LOS area would be subject to increased vulnerability to insects, diseases, and uncharacteristic wildfire. This alternative would perpetuate the presence of shade tolerant tree species in areas where they cannot be sustained without creating wildfire risk.

Alternative 2, 2 modified and 3

Of the approximately 311,730 acres of old forest (OFMS and OFSS) located on the WWNF approximately 10,940 acres are single stratum (OFSS) and 300,790 acres are multi-stratum (OFMS). Table 3 illustrates

that OFMS is within the historic range of variation across all vegetation groups; however, OFSS is well below HRV in all vegetation groups.

Table 3- Existing WWNF OFMS and OFSS acres of PVG

Structure/ PVG	Existing Structure		% of PVG		HRV	
	OFMS	OFSS	OFMS	OFSS	OFMS	OFSS
Cold Upland Forest	120,715	4,690	22%	1%	10-25%	5-20%
Dry Upland Forest	81,565	4,685	7%	<1%	5-15%	40-60%
Cold Upland Forest	98,510	1,565	19%	<1%	15-20%	10-20%

Approximately 2,682 acres (<1% of all old forest and approximately 1% of all OFMS structure) has been treated to date under previous project- specific forest plan amendments. Approximately 157 acres of OFMS in the Cove II WUI project were treated to reduce understory fuel loadings; however, prescriptions were modified to maintain the OFMS stand structure. The goal of the remaining 2,682 acres of past treatments were to restore stands to their historic structure, enhance the health of the stands, and provide for habitat needs of old-growth associated wildlife species, in particular those species that rely on OFSS stand structural components. Old forest single story structure is well below the 5-65% historic range of variation for all vegetation groups forest-wide (table 3). These treatments have and would continue to maintain old growth habitat, as defined by Forest Standards, while maintaining adequate levels of down logs and snags.

Alternative 2, 2 modified and 3 propose to treat approximately 385-395 acres of OFMS in dry and moist vegetation groups to reduce fuel loadings and restore it to OFSS structure, which is currently less than 1% of the forested landscape, and substantially below HRV (table 3). The cumulative effects of implementing the plan under alternatives 2, 2 modified and 3 are minor (1% of all OFMS structure), but positive relative to the extent of the restoration need Forest- wide. OFMS structure across the WWNF would remain within the historic range of variability in all vegetation groups.

Proposed commercial treatments adjacent to the project area from state, private or forest service ownership would reduce the complexity of the stand in the short term and potentially move the multistory to a single story condition. Precommercial thinning treatments on adjacent Forest Service land or Private land simplify understory condition and long term contributes to larger average diameter; therefore, in combination with the action alternative in the Two Eagle project area, more acres would experience accelerated tree growth. Precommercial treatments do not remove stands from current structural stage and are not proposed within old growth on private lands. Private land commercial harvest activities are expected to continue to maximize commercial output and mitigate wildfire danger. These treatments are not expected to maintain old growth conditions and old growth habitat is expected to decrease on private lands. Private land commercial harvest activities are expected to continue to maximize commercial output and mitigate wildfire danger. These treatments are not expected to maintain old growth conditions, and old growth habitat is expected to decrease on private land.

The effects of not treating in the stands proposed are described under the effects discussion for Alternative 1, generally placing the area and resources at risk to loss from insects, disease and large wildfire.

Literature Cited

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